Welcome to our Open House

On March 3, 1879, in the closing days of the 45th Congress, President Rutherford B. Hayes signed a sundry appropriation bill that included a provision creating a new bureau in the Department of the Interior, to be called the United States Geological Survey (USGS). This new bureau was charged with the "classification of the public lands, and examination of the geological structure, mineral resources, and products of the national domain."

For the 121 years since its establishment, the USGS has been the principal source of information about our Nation's physical resources—the configuration and character of the land surface, the composition and structure of the underlying rocks, and the quality, extent, and distribution of water and mineral resources. Recently, the Nation's biological resources and ecosystems have been added to the Survey's areas of responsibility, making it the premier natural science agency of the Federal Government.

Unlike all other Interior Department agencies (and indeed most parts of the Federal Government), the USGS has no regulatory, policy, or land-management functions. We are a fact-finding and research organization charged with providing policy makers and the public with the objective, unbiased scientific information that is needed to protect people from natural hazards and to make informed decisions on the development, management, and preservation of our Nation's lands and physical and biological resources.

The USGS offices in Menlo Park were first established in the 1950's. This site was chosen in part so that USGS scientists could be close to Stanford University for fostering collaborative work (Stanford was chosen over the University of California at Berkeley because cheap land was available on the Peninsula—a consideration that seems ironic in today's real estate market!). The Western Region Center, as it was called, grew over the years until more than 1,200 USGS staff worked in the Menlo Park offices and related offices in Palo Alto and Redwood City. In recent years, a combination of general downsizing of the USGS and of increased dispersion of staff to other offices in the Western United States has reduced the Menlo Park staff to about 750 employees. Nonetheless, these Menlo Park offices remain a premier center for digital and photo mapping of our Nation and for research on earthquakes, volcanoes, coastal and marine geology, mineral and energy resources, water quality and supply problems, and the geologic evolution of the Western United States, including Alaska, Hawaii, and the Pacific territories.

The more than 250 exhibits and presentations at this Open House illustrate the diversity of projects in which USGS employees are involved. About 75 of those exhibits have come here from other USGS locations in the Western United States. These include exhibits on planetary science from the USGS center in Flagstaff, Arizona, exhibits on biological science from the USGS center in Seattle, Washington, and additional exhibits from 16 other USGS locations. We hope that you enjoy yourself and that you come away with a sense of excitement about the work of the USGS and with a greater curiosity about and appreciation of how our lives are affected by the complex natural systems of our dynamic planet—Earth.

OPEN HOUSE HIGHLIGHTS

Passport

Don't forget to pick up a Passport when you embark on your adventures in Science for a Changing World. Checkpoints are located throughout the USGS campus (see the map inside the Passport)—there kids of all ages can get their Passport stamped as they visit the many theme areas of the 2000 Open House.

Hands-on Activities

Many exhibits located at the Open House are "hands-on" activities for children of all ages. Look for the hand symbol and enjoy experiencing and creating the science yourself.

Food and Refreshments

Food service is available at two locations: Building 20 and west of Building 2. These locations are shown on the centerfold map in this program. Snacks are available at several other sites.

Music

For a change of pace from enjoying the exhibits, you can hear "Duckweed," a music group composed mostly of USGS employees, which performs traditional old-time American and Celtic music, and the "Oliver Jazz Combo," with piano, bass viol, alto saxophone, and drums. "Duckweed" and the "Oliver Jazz Combo" will perform between Buildings 1 and 20 on each day of the Open House (see posted schedule for performance times).

Flower and Garden Tour

See the plants in our campus gardens; guided tours at 11:00 A.M. each day. Meet outside the west end of Building 20 (see map).

Video Theater and Speaker Forum

The large conference room upstairs in Building 3 (conference room A) will feature talks by USGS scientists (with ASL interpreters) on selected topics alternating with a Video Theater playing a selection of USGS videos. See the posted schedule for these activities.

GeoKids

GeoKids is our award-winning daycare center located on the USGS campus. Proceeds from the sales of its science souvenirs will benefit the nonprofit center. Stop by the GeoSouvenirs stations located in the Restless Earth tent and the Building 15 upper courtyard to see the supply of t-shirts, posters, and other goodies.

Facilities

Lost & found and communication center are located in Building 3, Room 3-101 (ext. 2726). For your convenience, public restrooms are located in all buildings with exhibits, as well as (with outside access) Building 20.

First aid and Emergencies

For first aid and other emergencies, see the Fire Department post by the Main Flagpole Circle. To reach emergency services from any internal phone extension, dial 9-911.

Special needs

All exhibits in this Open House are wheelchair accessible. Interpreters for the hearing-impaired (ASL) are available at the lectures and videos in Building 3 and for touring groups by prior request. Visitors with special needs or concerns, please go to the communication center in Building 3 (room 3-101).

Please help the USGS conserve resources

Recycling bins for aluminum cans and glass or plastic bottles are located throughout the campus. *Please deposit recyclable discards in the recycling bins and place only unrecyclable trash in the trash cans.* Locations of many recycling bins are shown on the centerfold map by the recycling symbol:

Reduce–reuse–recycle

The USGS is committed to conserving energy and other resources in our daily operations by actively participating in local recycling efforts and by using recycled-content products. This program and most other printed materials at the USGS are produced on recycled-content paper. While we are pleased to share this material with you, we ask that you take only what you intend to use, and try to limit handouts to one set per family. Many of our exhibitors have made their information available via our Web site. Please consider asking for the appropriate Web address and accessing the information electronically instead of taking a handout.

If you have no further need for this program after you leave today, please place it in the boxes located at the Welcome Tables for someone else to use. Thank you for supporting our conservation efforts.

EXHIBIT LOCATIONS Buildings are listed in numerical order, followed by tents (see centerfold map)

Main Flagpole Circle

The community classroom
Menlo Park Fire Protection District

Gold panning
Robert Oscarson, Rudy Kopf, Sheri Oscarson, and Santa Clara Miners Association

Police community outreach
Menlo Park Police Department

Building 1—Outside on the Lawn

Duckweed—A traditional American music string band (see posted schedule for performance times)—*W. Nokleberg, G.L. Bynum, G. Cochrane, A. Cooper, R. Dias, H. Gibbons, H. Goss, N. Kalman, S. Ludington, S. Mills, V. Mossotti, J. Reid, S. Ross, L.H. Schwartz, S. Silva, M. Sloan, S. Stanley, J. Tinsley, R. Wilson, F. Wong*

Oliver Jazz Combo (see posted schedule for performance times)
Howard Oliver, Luther Cuffy, Bob Murphy, Ken Besagio

Flower and garden tour of the USGS campus (meet outside the west end of Building 20. Tours at 11:00 A.M. each day)—*Howard Oliver*

Building 1

Rock, mineral, and fossil collection of the U.S. Geological Survey Western Region
Gretchen Luepke Bynum

View wonders from sea and river—Photos of the deep-sea floor, rocks that grow on extinct undersea volcanoes, aerial video footage of California beaches, fossil-rich rocks from Santa Cruz County, a slice of sandbar from Grand Canyon
Coastal and Marine Geology Team

El Niño sea-level rise wreaks havoc in San Francisco Bay region
Holly Ryan, Helen Gibbons, Jim Hendley, Peter Stauffer

Mud, glorious mud—Sediment studies of the Monterey Bay National Marine Sanctuary continental shelf
Brian D. Edwards

Monterey Canyon—What happens at the downstream end?
Bill Normark, Jane Reid, Andrea Fildani

Sea-floor rocks and sediments of Monterey Bay
Steve Eittreim, Roberto Anima, Andy Stevenson, Florence Wong

Changes in selected Monterey Bay beaches between the 1982-83 El Niño and 1995
John Dingler, Tom Reiss

Topo salad trays—3-D models of Angel Island and Monterey Canyon
USGS Education Outreach and Coastal and Marine Geology Team

Building 2

Antique gravity, magnetic, and surveying equipment
Dave Ponce, Bob Morin

This Dynamic Earth—The story of plate tectonics (room 2126)
Carol Reiss, Bob Tilling

Building 2—Courtyard

Ask-A-Geologist
USGS staff

Typical rocks of the San Francisco Bay area
Michael A. Clynne

Building 2—Courtyard *(continued)*

Glacier Bay National Park and Preserve—Rocks + landforms = eco(sub)systems
Dave Brew (USGS), Everett Kissinger (U.S. Forest Service)

Environmental hazards of mercury ores in the San Francisco Bay region
James J. Rytuba

Gravity and magnetic studies along the Hayward Fault, California
Dave Ponce and others

Using geophysics to explore the world below
Geophysical Unit of Menlo Park (GUMP)

California gold mining—History and environmental effects
Roger Ashley

Dynamic computer model for metallogenesis and tectonics of Circum-North Pacific
Warren Nokleberg, Christopher Scotese, David Piper, Robert Miller, James Monger, Thomas Bundtzen, Vladimir Shpikerman, Leonid Parenov, Alexander Khanchuk, David Scholl

Implications of stream-sediment geochemistry in the northern Carlin gold trend, Nevada
T.G. Theodore, B.B. Kotlyar, V.I. Berger, B.C. Moring, D.A. Singer

Implications of the rare barium mineral celsian in the Ruby Mountains, Nevada
V.I. Berger, T.G. Theodore, R.M. Tosdal, R.L. Oscarson

Geologic framework characteristic controls on dissolved metal distribution, transport, and fate in basins of the southwestern United States—Example from southern Arizona
Floyd Gray, Laura Brady, Laurie Wirt, Karen Bolm, Kerrie Caruthers, Carlos Velez, James Bliss

Minerals in our environment
Judy Weathers, John Galloway, Dave Frank

Everyday uses of minerals
Sue Priest, Sue Beard

Make your own toothpaste
Dave Frank, Karen Bolm

Understanding lake clarity, geologic hazards, and forest health in the Lake Tahoe basin
Gary Raines

Remote-sensing applications—Open space change and dust storm detection
Pat Chavez, Kathryn Thomas, Kris Estes, Miguel Velasco, Dave MacKinnon, Stuart Sides, Deborah Lee Soltesz

Alaska activities
USGS Water Resources and Geology staff

Lava entering the sea—Explosions, land collapses, and volcanic fume on Kilauea Volcano, Hawai'i
Jenda Johnson, Steve Brantley

Mount Rainier—Your backyard volcano
Carolyn Driedger, Kevin Scott, Tom Sisson, Lisa Faust

Digital Shasta—Applying Geographic Information Systems (GIS) technology to volcano hazards
Dave Ramsey, Joel Robinson, Robert Christiansen

The sky is falling—Hazards from volcanic ash
David A. Johnston Cascades Volcano Observatory

Remembering Mount St. Helens—May 20, 1980
Benjamin Sleeter

Living safely with Mount Rainier Volcano
Mount Rainier Volcano Hazards Workgroup

Volcano and earthquake hazards of the Crater Lake region, Oregon
Charlie Bacon, Larry Mastin, Kevin Scott, Manuel Nathenson

Building 3

USGS Photo Contest winners
USGS staff

Earth Science Information Center (ESIC) book and map sales
Mitch Adelson, Bobby Amiri, Tina Anderson, Jim Calzia, Terry Carr, Greg Durocher, Diane Garcia, Beth Gorman, Bill Johnson, Gloria Kirton, Doug Perera, Kathy Phelps, Christian Raumann, Avery Rendon, Tom Servatius, Spenser Shafsky, Ben Sleeter, Christy Talbot, Jeff Taylor, Mara Tongue

National Hydrography Dataset for California
Vicki Lukas, Alan Vaughn

USGS help in the wake of Hurricane Mitch
Jesse Nelson, Alexander Evans

Digital Orthophotoquad (DOQ) Production—From A to Z
Tom Coons, Bob Vitales, and the QA and Technical Planning Section and Orthophoto Production Team

National Atlas of the United States
Deborah Cruse, Rick Champion, Jay Donnelly

The dynamics of urban growth
William Acevedo, Lora Richards, John Vogel

Searching for geographic data online
Vicki Lukas, Tom Sturm

San Francisquito Creek—The many dimensions of a community-based project
Herman Karl, Susan Landsittel, Alice Cathcart, Brian Bennet, Alexander Evans, Connie Hoong (all USGS); Pat Showalter (San Francisquito Creek Conservation and Resource Management Planning Committee)

Invest now in earthquake hazard mitigation, or pay later!
Laura Dinitz, James Davis, Richard Bernknopf

Hazard Support System
Darrell Herd, Kevin Hope

Long-period seismograph that records earthquakes occurring anywhere in the world
Jack Van Schaack

Speaker Forum and Video Theater (conference room A; see posted schedule for exact times and titles)
Susan Toussaint

Lost and Found/Communications Center/Director's Office (room 3-101)
USGS Western Region staff

Speaker Forum and Video Theater
(Building 3, upstairs conference room A)

Featured speakers include:

Andy Michael—*The Music of Earthquakes*

David Schwartz—*Probabilities of Future Earthquakes*

David Howell—*From Hazards to Wine: Geology of San Francisco Bay Area*

Karen Chin—*Sleuthing Dinosaur Diets*

USGS video productions will be shown before and after featured speakers. Videos include:

Volcano Hazards from Mt. Hood

Future Quakes

At Ocean's Edge

Exotic Terrane

Building 3—Visitor's Center

Plans for a new USGS Visitor Center
USGS staff and Leslie Stone Associates

Interactive earthquake quiz—Do you know your faults?
Fred Klein, Steve Walter

Seismographs—Recording the Earth's signals
Rick Lester, Susan Garcia

26 years of earthquakes in the Bay Area
Steve Walter, David Oppenheimer

How close to a fault do you live?
Steve Walter

Building 5

CD-ROM publishing at USGS—Examples and techniques
Michael F. Diggles

Pacific Coast landslides—What's moving?
- **Landslides and dirt depth in the Pacific Coast Range**
  Kevin M. Schmidt, David R. Montgomery
- **California Landslides**
  Landslide Group

Geographic Information Systems—Evolving tool for Earth science applications
Western Earth Surface Processes GIS Team

GPS and handheld GIS—Latest additions to the geologist's field kit
Western Earth Surface Processes GIS Team

Geologic explorers—Take a field trip across the changing landscape of the San Francisco Bay Area; discover the materials and processes beneath your feet!
Western Earth Surface Processes Team
- **Unraveling geology in the SF Bay Area- How to read a geologic map**
- **Rock around the Bay—What's under your feet?**
- **Get a geologic map of your town**
- **Did you know? Ancient volcanoes around the Bay**
- **Did you know? Uplifting hills**
- **Landslides near you**
- **Focus on faults**
- **Finding fossils**
- **Where can you go? Pick up a field trip guide**
- **Do you drive in the SF Bay Area? Where does your gas come from? Where does it go?**

Building 5—Patio

Everything (almost) about oil and gas
Western Region Energy Group
- **Killer rocks?**
  Margaret Keller, Caroline Isaacs, Ken Bird
- **Energy on the frontier—Alaska**
  Kenneth J. Bird, Thomas E. Moore
- **Are we running out of oil?**
  Les Magoon
- **Super giant oil fields in the former Soviet Union**
  Harry E. Cook
- **Oil beneath California's silicon valley**
  Richard G. Stanley
- **Natural oil and gas pollution**
  Les Magoon
- **Modeling flow of petroleum, groundwater, and heat in deep sedimentary basins**
  E.L. Rowan

Building 6

Contracting and purchasing opportunities with the Geological Survey
Rita A. Leach, Sunny Drennan

USGS employment opportunities
Staff of the Western Region Human Resources Office

Geologic Division Ethnic Minority Advisory Committee (EMAC)
Geologic Division EMAC

Building 6—Front Lawn

Historical field camp
Mount Diablo Surveyors Historical Society

Building 9F—Outside

Forces that make the Earth move
Joe Svitek, Robert Summers, Steve Hickman

Building 9G—Outside

Earthquake-induced liquefaction—Maps and live demonstrations
Thomas L. Holzer, John Tinslely, Selcuk Toprak, Mike Bennett, Coyn Criley

Cone penetration test truck—Predicting sites of liquefaction and severe shaking during earthquakes (demonstrations from 11:00 A.M.-1:00 P.M.)
Thomas E. Noce, Thomas L. Holzer, Hsi-Ping Liu

Building 11—Outside Tower

Dog bites earthquake (rock vs. soil shaking model)
John Evans, Angie Young

Your fault (foam-rubber fault model)
John Evans, Joe Andrews

Good shakes (earthquake ride for kids 3-11)
John Evans, Tooky Campione, Gary Phillips

Wave tower (shake your own skyscraper)
John Evans, Dave Croker, Mehmet Celebi, Ken Young

Building 15—1st Floor

Using high-resolution multibeam bathymetry to identify sea-floor surface rupture along the Palos Verdes fault complex in offshore Southern California
Michael S. Marlow, James V. Gardner, William R. Normark

Discovery of iceberg gouges more than 100 years old in Glacier Bay, Alaska—Gouged areas provide richer habitat for halibut
Paul R.Carlson, Philip N. Hooge, Guy R. Cochrane, Gregory Gabel

Flying through the sea floor of San Francisco Bay and Lake Tahoe (room 1205)
James V. Gardner

The water beneath your feet—Models of soil moisture and ground water
Kathy Akstin, Carol Lind, Fred Murphy, Tyson Smith, Dave Stonestrom

Volcanic ash beds as timelines for unravelling Earth's history (room 1110)
Andrei Sarna-Wojcicki, James P. Walker, Regina Boussard, Michelle Richardson

Fish health, fish ecology, and aquatic ecosystems of the West
Frank Shipley, Debra Becker

Pacific salmon life history—A Web-based interactive presentation
Robin Schrock, Jack Hotchkiss, Karen Hans

Saving Hawai'i's forest birds—A poster, computer, and Ask-A-Biologist presentation
Luanne Johnson, Bethany Woodworth

Salmon behavior studies in the Columbia Basin
Glen Holmberg, Kenneth Tiffan, John Beeman, Mindi Sheer, Dennis Rondorf

The Wind River watershed project
Patrick Connolly, Ian Jezorek, James Petersen

Building 15—1st Floor *(continued)*

White sturgeon research at the Columbia River Research Laboratory
Michael Parsley, Darren Gallion, Michael Morgan, Mindi Sheer

White sturgeon—A prehistoric giant
Dena Gadomski, Mike Parsley, Cheri Anderson

Habitat use by white sturgeon
Darren Gallion, Michael Parsley

White sturgeon spawning areas in the lower Snake River
Kevin Kappenman, Mike Parsley

Side-scan sonar in fisheries research activities
Michael Parsley, Mindi Sheer, Pete Kofoot, Kevin Kappenman

Monitoring of radio-tagged juvenile salmon in the Snake and Columbia Rivers
Columbia River Research Laboratory, U.S. Army Corps of Engineers, and Bonneville Power Administration

ELISA—A tool to measure the ability of salmon to resist disease
Stewart Alcorn, Ron Pascho

Lamprey research in the Columbia River basin
James Seelye, Jennifer Bayer, Matthew Mesa

Impact of bacterial kidney disease on transported and non-transported juvenile spring/summer Chinook salmon (*Oncorhynchus tshawytscha***) in the Columbia and Snake River Basins**
Diane Elliott, Ron Pascho

Atomic-force microscope—Extreme magnification of weathered mineral surfaces (room 1013)
Davison Vivit, Art White, Marjorie Schulz

Mammals—Can you guess the species from these skulls? (May 12 only)
Judd Howell

Arctic fossils and fur—Can you guess? (May 13 and 14)
Jack Mellor

Discovery for Recovery: An international pintail recovery initiative—A Web-based interactive presentation
Western Ecological Research Center

Barrier fencing reduces vertebrate road kills
W. Boarman, M. Sazaki

Seabird monitoring and research in the Southern California bight
H. Carter, T. Keeney, G. McChesney, W. McIver, D. Whitworth, L. Ochikubo, T. Minor, D. Jacques, C. Strong, D. Gilmer, R. Golightly

Survival, habitat use, and movements of female northern pintails radio-marked in Suisun Marsh
M. Casazza, M. Miller

Aspects of the ecology of the western pond turtle in the Mojave River
J. Lovich, K. Meyer

Nesting ecology of mourning doves
M. Miller

Waterbird use of rice fields in the northern Sacramento Valley
G. Wylie, J. Day

Life history and habitat use characteristics of the giant garter snake
G. Wylie, M. Casazza

What is red water and does it deter waterfowl?
M. Miller, S. Hewitson

Inventory of terrestrial vertebrates, 1990-1997—Golden Gate National Recreation Area, California
M. Seminoff-Irving, J. Howell

Tule elk population monitoring—Point Reyes National Seashore, California
M. Seminoff-Irving, G. Brooks, J. Howell

Hibernation temperatures, timing, and site characteristics for desert tortoises in the northeastern Mojave Desert
D. Haines, T. Esque, C. Tracy

Research support for urban wildland planning in Southern California
R. Fisher, B. Kus

Demography of populations of giant kelp at San Nicolas Island, California
M. Kenner, J. Estes

Tracking lesser snow geese on the Internet with satellite telemetry
W. Perry, J. Takekawa

Invaders in the Sonoran Desert
W. Halvorson, P. Guertin

Africanized bees in North America
M. Kunzmann

GIS for conservation
M. Kunzmann, W. Halvorson, P. Bennett

Charismatic apex predators control ocean ecosystems
J. Estes

Interagency cooperation on a large manipulative experiment
T. Esque, S. Eckert, L. Evers, T. Duck, B. Bracken, T. Bartlett, D. Mathis

Alaska's wildlife—Up close and personal
Alaska Biological Science Center

Cooperative forest ecosystem research—Science supporting management of natural resources
Cooperative Forest Ecosystem Research Program

Spatial and temporal variation in habitat use by isolated populations of coastal cutthroat trout
Steve Hendricks (Oregon State University), Robert Gresswell

The USGS Forest and Rangeland Ecosystem Science Center
Ruth Jacobs

Using geospatial technology to identify streams supporting isolated populations of coastal cutthroat trout
Robert Gresswell, George Lienkaemper

The Raptor Information System
Mary Jean Cowing, Karen Steenhof

Population structure of the snowy plover in North America based on genetic analysis
Leah Gorman (Oregon State University), Susan Haig

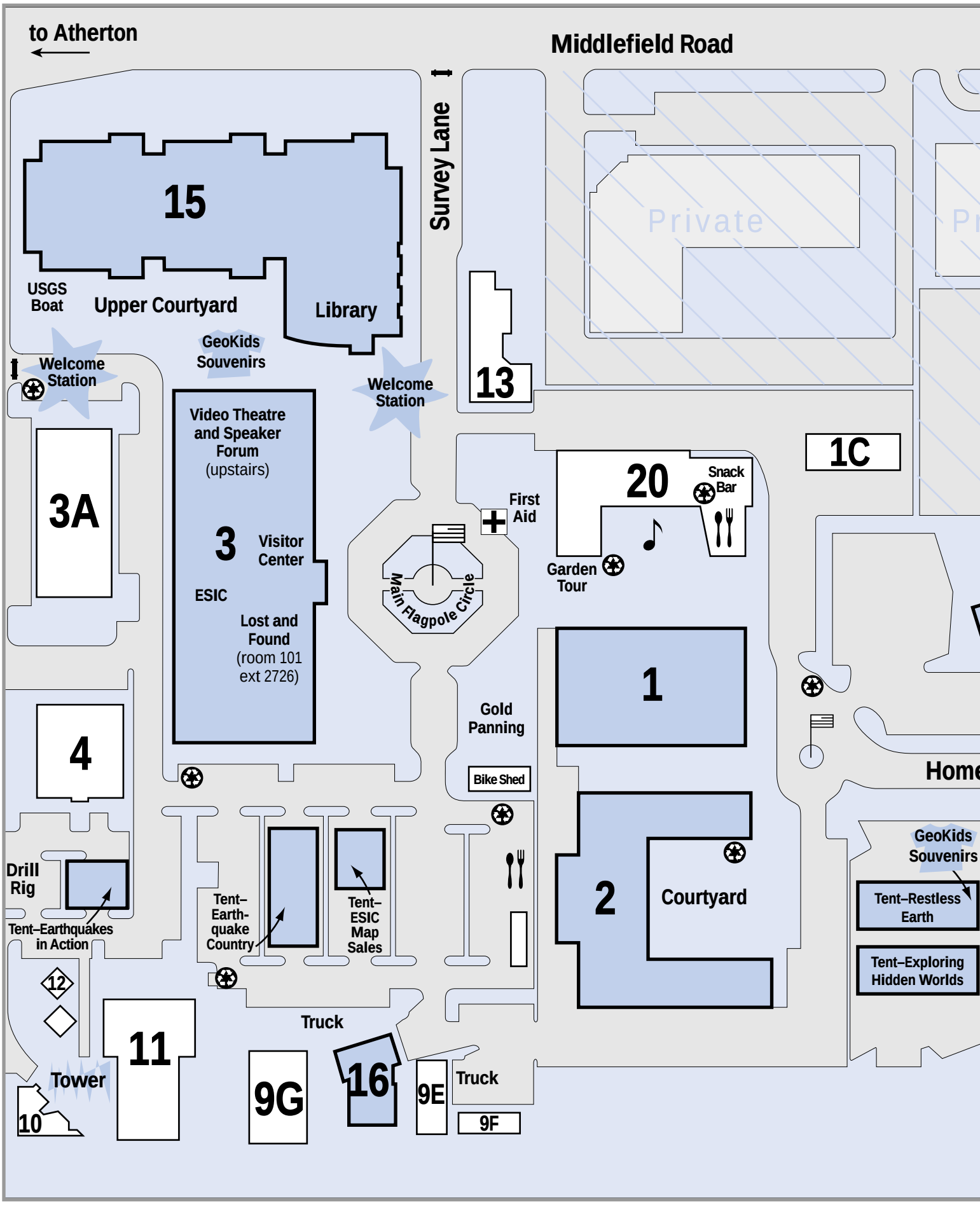
VegSpec—A decision support tool for revegetation
David Pyke

Long-distance bird movements in western North America
M.R. Fuller, M.A. Yates, L.S. Schueck, K.K. Bates, W.S. Seegar, G.S. Young, M.N. Kochert, M.J. Bechard, B. Woodbridge, T.L. Maechtle, H.D. Shannon

IMPred—Controlling alien predators in Hawai'i
David Foote, Gerald Lindsey

Hawaiian ecosystems at risk
Lloyd Loope, Philip Thomas

Western Fisheries Research Center—Tools of the trade
Western Fisheries Research Center


to Atherton
Middlefield Road
Survey Lane
15
USGS Boat
Upper Courtyard
Library
GeoKids Souvenirs
Welcome Station
Welcome Station
13
Private
1C
3A
Video Theatre and Speaker Forum (upstairs)
3
Visitor Center
ESIC
Lost and Found (room 101 ext 2726)
First Aid
20
Snack Bar
Garden Tour
Main Flagpole Circle
1
4
Gold Panning
Bike Shed
Home
GeoKids Souvenirs
Drill Rig
Tent–Earthquakes in Action
Tent–Earth-quake Country
Tent–ESIC Map Sales
2
Courtyard
Tent–Restless Earth
Tent–Exploring Hidden Worlds
12
Truck
11
Tower
10
9G
16
9E
Truck
9F

EXPLANATION

Blue buildings and tents—Exhibits (restrooms are available in all buildings with exhibits as well as near the snack bar in Building 20)

White buildings—No exhibits

Recycle containers

Music—Check the posted schedule for performance times

Food

Road closed to vehicles

First aid and emergencies—For assistance go to the Fire Department post by the Main Flagpole Circle. Internal phone extension, dial 9-911

Welcome Station

Welcome Station—Get your Programs, Passports, Posters, and detailed Schedules of Events here

GeoKids Souvenirs

Souvenirs—Minerals, T-shirts, cups, posters, books, and other fine stuff here

Tower

"Whole lotta shakin' goin' on"—Visit the tower outside Bldg 11 for some hands-on earthquake exhibits. More **earthquake exhibits** in the Earthquake Country and Earthquakes in Action tents as well as in Bldg 3, and outside Bldg 9F and 9G

EXHIBITS—Please see main body of program for a more complete listing

Ask-a-Biologist
Bldg. 15—1st floor

Ask-a-Geologist
Bldg. 2—Courtyard

Ask-a-Paleontologist
Bldg. 15—Library

Author signing
Restless Earth and ESIC Tents

Bay Area Geology
Bldg. 5, Bldg. 2—Courtyard

Biological Resources
Bldg. 15

Earthquakes
Bldg. 11—Tower, Earthquakes in Action and Earthquake Country Tents

Ecosystems Studies
Bldg. 15

Energy Resources
Bldg. 5—Patio

Field Camp (living history)
Bldg. 6—Front lawn

First Aid
Main Flagpole Circle

Flower and Garden Tour
Meet outside west end of Bldg. 20

Fossils
Bldg. 15—Library

Geophysics
Bldg. 2—Courtyard

Gold Panning
Main Flagpole Circle

Library Resources
Bldg. 15—Library

Maps and Mapping
Bldg. 3

Marine Studies
Bldg.1, Bldg. 15, Hidden Worlds Tent

Mineral Resources
Bldg. 2—Courtyard

National Parks Studies
Restless Earth Tent

Paleomagnetism
Bldg. 16

Planetary Studies
Hidden Worlds Tent

Publication and Map Sales
Bldg 3, ESIC Tent

Rocks and Minerals
Bldg. 1, Bldg. 2—Courtyard, Bldg. 15

Speaker Forum
Bldg. 3—Conference room A

Trucks
Outside Bldgs. 9F, 9G

Video Theatre
Bldg. 3—Conference room A

Volcanoes
Bldg. 2—Courtyard

Water Resources
Bldg 15

Building 15—1st Floor *(continued)*

Water flow and contamination in soils
John Nimmo, Kim Perkins, Kari Winfield, Grace Su

You are what you eat, plus a bit—Use of stable isotopes in foodweb studies
Steven Silva, Carol Kendall, Doug White, Cecily Chang, Bob Dias, Cheryl Smith, Bob Michel, John Radyk, Scott Wankel, Moses Hardy, David Hamburger

Building 15—2nd Floor

Rock, mineral, and fossil collection of the U.S. Geological Survey Western Region
Gretchen Luepke Bynum

Tidal marsh restoration surveys in San Francisco Bay
J. Takekawa, G. Wylie

The effect of geology on the Missouri River segment of the Lewis and Clark Expedition (room 2205)
Tau Rho Alpha , Roberto Lugo, Ann Alpha

National Water Quality Assessment
Marc A. Sylvester, Terry M. Short, Steve L. Goodbred

How clean is clean?
Brent Topping

What clams can tell us about the history of water quality in south San Francisco Bay
Michelle Hornberger, Sam Luoma, Dan Cain, Cynthia Brown, Elisabeth Duffy, Robin Bouse, Francis Parchaso, Janet Thompson

Critters in the mud—Animals from San Francisco Bay
Francis Parchaso, Janet Thompson

San Francisco Bay on the Web (room 2025)
Laura Z. Torresan, Richard E. Smith

The "Nowcast" system for tides and currents in San Francisco Bay (room 2025)
Ralph Cheng, Richard Smith, Chad English, Jeffrey Gartner, Chi-Hai Ling

Contaminant effects on fish in the Sacramento River from exposure to heavy metals in acid mine drainage.
Mike Saiki, Dixon Duty Station

The *tiniest* introduced animal in San Francisco Bay
Mary McGann, Rendy Keaten

Phytoplankton dynamics in San Francisco Bay
Jim Cloern, Brian Cole, Lisa Lucas, Bill Sobczak, Tara Schraga, Jody Edmunds, Andy Arnsberg

Stream biomonitoring using macroinvertebrates
Jim Carter, Steve Fend, Paul Weissich

Mercury contamination from historic mining and bioaccumulation in the Bear River and South Fork Yuba River watersheds
C. Alpers, M. Hunerlach, R. Hothem, J. May, M. Jennings, M. Law

Newly developed technologies for groundwater remediation—Investigating cost-effective alternatives for treatment
J. Joye, Chris Fuller, Mike Piana, Jim Davis

World's most acidic waters are found near Redding, California
Kirk Nordstrom, Charlie Alpers

California District activities
Walter Swain, Pat Shiffer

Water use information—California is continually the Nation's leader in water use
William E. Templin

Exposure of Delta smelt to dissolved pesticides during sensitive life stages
G. Edward Moon, Catherine A. Ruhl, Mary Helen Nicolini, James Orlando, Kathryn Kuivila, David Schoellhamer

Building 15—3rd Floor

Saltwater intrusion in Los Angeles Basin coastal aquifers—An offshore-onshore issue
Brian D. Edwards, Daniel J. Ponti, Eric G. Reichard, Randall T. Hanson

Coastal and marine organic geochemistry—Oil spills (Exxon Valdez, 10 years later), California coastal tarballs, and other studies
Keith Kvenvolden, Thomas Lorenson, Robert Rosenbauer, Fran Hostettler, Paul Carlson

Topo Map Bingo—Prizes for winners! (room 3245)
Rick Champion, Melody Falepouono, Diane Garcia, Janet Goodman, Scott Goodman, Ashley Hope, Gloria Kirton, Kathy Phelps, Sue Sbardellati, Michael Sealy, Sean Stone, Andy Stone, Alan Mikuni, Christy Mikuni, Cory Mikuni, Wally Oliver, Cherie Oliver, Bob Torbensen, Jeff Taylor

Natural biodegradation of ground-water contaminants
E. Michael Godsy, Barbara Bekins, Ean Warren, Victor V. Paganelli

Understanding the urban influence on Santa Monica Bay, southern California
Homa Lee, Megan McQuarrie

Water on the World Wide Web (room 3255)
Staff, Office of the Regional Hydrologist

Exploring America's coral reefs (room 3255)
Mike Field, Susan Cochran, Kevin Evans, Scott Calhoun

Generation of digital image maps in clear coastal waters (room 3255)
Pat S. Chavez, Michael E. Field, JoAnn Isbrecht, Miguel Velasco, Stuart C. Sides, Deborah Lee Soltesz

Computer simulation of ground-water flow and contaminant movement (room 3255)
Paul Hsieh, Claire Tiedeman

Building 15—Upper Courtyard

USGS research vessels in San Francisco Bay
Byron Richards, Scott Conard

Water-quality sampling and analysis activities within the Central Valley and San Francisco Bay regions of California
Joseph Domagalski

How do we measure streamflow?
Mike Nolan, Steve Ingebritsen

GeoSouvenir sales
GeoKids (All proceeds from souvenir sales go to GeoKids, the Menlo Survey Cooperative Daycare Center)

Do soils breathe? CO_2 in a warming world.
Jennifer Harden, Kristen Manies, Collin Pinney

Invasive species—Changing the landscape of America
Elena Deshler

Building 15—Library

Rockin' by the Bay—Common Bay Area rocks and minerals
USGS Library Staff

The Earth under your feet—Geologic maps of the Bay Area
USGS Library Staff

Ask-A-Paleontologist
John Barron, Scott Starratt, Kris McDougall, Phil Stoffer

How to find a map title fast—National Geologic Map Index on the Web
Nancy Blair, Chuck Mayfield

Building 15—Library *(continued)*

Public access to the USGS Library catalog on the Web
USGS Library Staff

Select publications on careers in science and government
Sharon R. Sachse, Angelica Bravos

Cool hot rocks that glow—Fluorescent minerals
Phil Stoffer

Fangs, bones, gizzard stones, and other dead things
Phil Stoffer

Globes, plastic planets, edible earths, and maps you wear
Tau Rho Alpha

Teaching science to kids—The USGS Education Collection
USGS Library Staff

Virtual landscapes and geology of the south Bay Area
Phil Stoffer and San Jose State University Geology GIS class

Microfossils and their uses
John Barron, Scott Starratt, Kris McDougall

In the tracks of a giant *Tyrannosaurus rex*
Charles Pillmore and others

Building 16

The Rock Magnetics Laboratory—National Historic Landmark with continuous video presentation of *Secrets in Stone*
Paleomagnetics Staff

The shielded room—A magnetic-field-free environment for experimentation
Paleomagnetics Staff

Holocene geomagnetic secular variation in western United States
Duane Champion, Richard Hoblitt, Cynthia Gardner, Robin Holcomb, Russ Burmeister, Jon Hagstrum

Large-volume lava flows in the Cascade Range of California
Volcano Hazards Team

San Francisco's changing magnetic personality—Magnetic field measurements at the Presidio since 1783
Jack Hillhouse

ESIC Tent

Earth Science Information Center (ESIC) book and map sales
Mitch Adelson, Bobby Armiri, Tina Anderson, Jim Calzia, Terry Carr, Greg Durocher, Diane Garcia, Beth Gorman, Bill Johnson, Gloria Kirton, Doug Perera, Kathy Phelps, Christian Raumann, Avery Rendon, Tom Servatius, Spenser Shafsky, Ben Sleeter, Christy Talbot, Jeff Taylor, Mara Tongue

Meet the author—Book and map signing (see posted schedule for exact times)
USGS authors

Tent—Restless Earth

GeoSouvenir sales
GeoKids (All proceeds from souvenir sales go to GeoKids, the Menlo Survey Cooperative Daycare Center)

Meet the author—Book and map signing (see posted schedule for exact times)
USGS authors

Tent—Restless Earth *(continued)*

Build your own paper volcano, globe, or fossils
Tau Rho Alpha, John Galloway, Jocelyn DeLeon-Cabral, Nolie Aguirre, Rudy Reyes, Leigh Ann Davison, Salina Taaga, Sandi Page, Debbie Orlando

Long Valley Caldera—20 years of volcanic unrest
Dave Hill, Steve Brantley

Geology in your National Parks
USGS and National Park Service
- **National Park units of the San Francisco Bay Area—***Will Elder*
- **Yosemite National Park—***King Huber*
- **North Cascades National Park—***Rowland Tabor*
- **Mojave National Preserve—***Dave Miller, Dave Bedford*
- **Death Valley National Park—***Jim Calzia*
- **City of Rocks National Reserve—***Dave Miller, Dave Bedford*
- **Lassen Volcanic National Park—***Mike Clynne*
- **Pinnacles National Monument—***Bruce Rogers*

Experimenting with mineral hardness
Carl Wentworth and others

Evolution of a geologist—The who, what, where, when, and how of becoming a professional rock hound
Rebecca Stamski and others

The face of our land
Richard Pike

A Tapestry of Time and Terrain—The union of geologic and topographic maps
Jose Vigil, Richard Pike, David Howell, Eleanore Jewel

Geologic applications for ecosystems—Fragility of Mojave Desert landscape
Dave Miller, Dave Bedford, Geoff Phelps

USGS activities around the Pacific rim
David Howell, George Gryc, Brynn Bemis, Zenon C. Valin

Visit the Pacific Northwest

Geologic evolution, hazards, and resources—Fun puzzles for geologists and geophysicists
- **What's under Seattle?**
  Rick Blakely, Ray Wells, Craig Weaver, Sam Johnson
- **Mapping the geology of the North Cascades, Washington—From foot and hammer to digital display**
  Rowland Tabor, Ralph Haugerud

- **Hunting for faults in the Puget Sound region armed only with airplane and magnetometer**
  Rick Blakely, Ray Wells, Craig Weaver
- **How the Jell-O shakes depends on the shape of the bowl—A three-dimensional view of the Seattle Basin**
  Rick Blakely, Tom Brocher, Ray Wells
- **Synoptic view of Vashon glaciation, Northwest Washington**
  Ralph Haugerud, Derek Booth
- **New developments in Puget Lowland geologic mapping**
  Pacific Northwest Mapping Project
- **New geologic maps of the Pacific Northwest**
  Pacific Northwest Mapping Project
- **Plate tectonic motions, microplates, and earthquakes in the Pacific Northwest**
  Ray Wells, Rick Blakely, Craig Weaver, Ralph Haugerud

California—Your geology classroom
California Department of Conservation, Division of Mines and Geology

Tent—Exploring Hidden Worlds

Investigating the Ocean Floor

Run your own survey—Use radio waves to see what's under your feet
Walter Barnhardt, Robert Kayen, Diane Minasian, Brad Carkin

Sidescan sonar—Imaging the sea floor
Mike Boyle

Rocks from the deep ocean—Free samples from Loihi Seamount (Hawai'i's youngest volcano)
Coastal and Marine Geology Team

Mapping the sea floor in the 21st century
James V. Gardner, Pete Dartnell

Dress up like a marine geologist
Clint Steele, Carolyn Degnan

Tides, waves, and currents in the ocean—How we measure them
Guy Gelfenbaum, Jingping Xu, Laura Kerr, Chris Sherwood

Remote marine photography
Hank Chezar

A piece of the San Francisco Bay floor
Mike Torresan, Sue Hunt, John Chin

Man-made changes to the floor of San Francisco Bay
John Chin, Florence Wong, Paul Carlson

A seagull's view of the Central California coast
Bruce W. Rogers

Mapping the Solar System

Planetary Data System Imaging Node
Patricia A. Garcia, Eric M. Eliason, Susan K. LaVoie, Elizabeth Duxbury

Latest high-resolution global Moon map from the 1994 Clementine mission
A. McEwen, T. Becker, E. Lee, M. Robinson, E. Eliason

The Clementine Moon map on CD-ROM
Chris E. Isbell, Eric M. Eliason, Kevin Adams, Tammy Becker, Ella M. Lee, Alfred McEwen, Mark Robinson, Jac Shinaman, Lynn Weller

Latest high-resolution images from the Mars Global Surveyor/Mars Orbiter Camera
M.A. Caplinger, E. Jensen, K. Edgett, E.M. Eliason, P. Garcia

Three-dimensional color view of the Mars Pathfinder landing site
R. Kirk and others

Mars Pathfinder superpan panoramas
R. Kirk and others

Mars Rover research at NASA Ames
Hans Thomas and Gary Haith (NASA)

Flagstaff Field Center slide presentation
Dennis McMacken

Tent—Earthquake Country

The "LARSE" Project — Working towards a safer future for Los Angeles
Gary Fuis, Janice Murphy

Parkfield Earthquake-Prediction Experiment
Parkfield Working Group

Urban Seismology
*Allan Lindh, Oriana Durancyzk, Lu Dameral*l

Digging for earthquakes on the San Andreas Fault
Thomas Fumal and others

Satellite imagery of the San Andreas Fault
Mike Rymer

The earthquakes in your future—Where and when
D. Schwartz, T. Fumal, J. Hamilton, S. Hecker, J. Lienkaemper, C. Prentice, H. Stenner

The What? and Why? of the large 1999 earthquakes in Turkey
Heidi Stenner, Selcuk Toprak, Thomas Fumal, Thomas Holzer, Ross Stein, Mehmet Celebi

Did anyone predict the 1989 Loma Prieta, California, earthquake?
Ruth A. Harris

What the Nojima Fault Zone (cause of the 1995 Kobe, Japan, earthquake) looks like at depth
Diane E. Moore

Creating an ultrasound image of the Earth beneath Los Angeles using explosions—A survey to identify major faults and seismic hazards
Gary S. Fuis, Janice M. Murphy, J. Taylor Perron

Mapping earthquake faults in Puget Lowland, Washington—Results from seismic hazards investigations in Puget Sound (SHIPS)
Tom Brocher, Tom Parsons, Mike Fisher

A closeup view of the Hayward Fault
Jim Lienkaemper, David Schwartz

Earthquakes on the San Francisco peninsula—Where and why
Mary Lou Zoback

Accessing geophysical data for the San Francisco Bay Area over the World Wide Web
Page Stites

The jumping rocks of the Hector Mine earthquake
Andrew J. Michael, Stephanie L. Ross, Heidi D. Stenner

Rapid maps of ground shaking after earthquakes in the Bay Area—High-resolution mapping in Oakland and the Santa Clara Valley
John Boatwright, John Evans, Tom Noce, Howard Bundock

Earthquakes in Mexico—Shocks in a diving plate
Steve Kirby and others

Interactive earthquake quiz—Do you know your faults?
Fred Klein, Steve Walter

Tent—Earthquake Country—Outside

Shear-wave demonstration
Jim Gibbs, Bob Westerlund, Hsi-Ping Liu, John Tinsley, Dave Boore, Jack Boatwright, Dick Warrick

Crustal deformation and Global Positioning System (GPS)
Will Prescott, James Sutton, Charles Stiffler, Gary Hamilton, Karen Wendt, Jerry Svarc

Tent—Earthquakes in Action

Earthquake fault model and seismograph on a PC
Chris Dietel

Building safer structures
Kent Fogleman, Bob Page, Chris Stephens, Mehmet Celebi

Getting out the good stuff at the worst time (California earthquakes)
Robert Simpson, Susan Garcia, and others

Earthquake instruments—Old and new
Jack Van Schaack, Gray Jensen

Developing a national seismic system
David Oppenheimer, Will Kohler, Lynn Dietz

Monitoring earthquakes by satellite
Tom Burdette, Lester Sutherland

Early-warning earthquake alarm
Don Farrell, Fred Fischer

Seismic field station and telemetry
David Reneau, David Croker, Sam Rodriguez

Digital display of network seismic data
J. Luetgert

Geophysical data collection system for earthquake and volcano monitoring
Stan Silverman

Tent—Earthquakes in Action—Outside

Subsurface sampling using a drill rig to evaluate liquefaction hazards (demonstrations at 12 noon and 2:00 P.M.)
Michael Bennett, Coyn Criley

The people who helped to bring you the Open House

Steering Committee

Cindy Brown
Jane Ciener
Liz Colvard
Leslie Gordon (chair)
Jason Hunt
Sue Hunt
Nancy Jimenez
Pat Jorgenson
Dale Russell
Peter Stauffer
Dave Stonestrom
Mara Tongue

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Leslie Gordon (co-chair)

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Helen Gibbons
Dave Stonestrom

Building 2
John Galloway

Building 3
Robert Lugo
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Steve Walter

Building 5
Melanie Moreno

Building 6
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Building 11
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Building 15
Fran Hostettler
Dan Cain
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Library
Susan Toussaint
Page Mosier

Building 16
Duane Champion

Building 20
Mary Ellen Lazarus

Earthquake Tents
Susan Garcia
Stan Silverman

ESIC Tent
Mitch Adelson

Restless Earth Tent
Melanie Moreno

Exploring Hidden Worlds Tent
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Sacramento, Water Resources
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Seattle, Biological Resources
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Tucson/Spokane/Reno, Mineral Resources
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Cascades Volcano Observatory
Carolyn Driedger
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Hawaiian Volcano Observatory
Steve Brantley

Flagstaff Field Center
Sue Priest
Adrienne Wasserman

Environmental Issues/Recycling

Sue Hunt

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Safety and Security

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Sage Advice

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Sue Sbardellati
Sean Stone

Signage

Liz Colvard (chair)
Christian Raumann

Special Needs

Marcella Bonaldi

Telecommunication Network

Charlene Fischer

Traffic/Parking

Rebecca Barnhart
Bill Coronel (chair)
Paul Locher
Menlo Park Police Explorer Cadets
Phyllis Michel

VIP Preview

George Gryc
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Mary Ellen Lazarus
Rita Leach
Linda McDonough

Volunteer Coordination

Mara Tongue

Web Page

Sam Ariolla
Mike Diggles
Eleanore Jewel (chair)
Joe Vigil

The Open House Steering Committee wishes to thank the many scientists, technicians, staff, family, and friends who have donated their time and efforts to help create this open house.

Thanks also to the Menlo Park Police Department and the Menlo Park Fire Protection District for their contributions to safety and security at this event.

USGS Western Region Outreach Committee

Kevin Brenot
Cindy Brown (chair)
Leslie Gordon
Pat Jorgenson
Vicki Lukas
William Rambo
Mara Tongue
Susan Toussaint

U.S. GEOLOGICAL SURVEY WESTERN REGION CENTER

Sources of Information

Mailing address—All offices listed below:
U.S. Geological Survey
345 Middlefield Road, Mail Stop_____
Menlo Park, CA 94025-3591

Telephone Switchboard
Hours—M-F, 7:45-4:15
Phone—(650) 853-8300

Public Events Calendar
Recorded phone message—(650) 329-5000
Internet—http://online.wr.usgs.gov/calendar

USGS Home Page on the World Wide Web
http://www.usgs.gov

Earth Science Information Center
General information and sales of maps, books, aerial and satellite imagery, ortho-photography, and digital cartographic data
Hours—M-F, 8:00-4:00, Mail Stop 532
Phone—(650) 329-4390 or (888)-ASK-USGS
FAX—(650) 329-5130
TDD—(650) 329-5092
E-mail—wmcesic@usgs.gov
Internet—http://mapping.usgs.gov/esic

Public Affairs
Pat Jorgenson—Mail Stop 144
News media services—(650) 329-4000

Speaker and Tour requests
Phone—(650) 329-5392

Ask-A-Geologist
E-mail inquiries—ask-a-geologist@usgs.gov

Geologic Inquiries
William L. Rambo—Mail Stop 919
General earth-science and geologic information, professional referrals
Phone—(650) 329-5104

Education
Leslie C. Gordon—Mail Stop 919
Earth-science education information, resources, and other services
Phone—(650) 329-4006
Internet—http://www.usgs.gov/education

Library
Open to public for reference use. Materials may be borrowed through other libraries on interlibrary loan.
Hours—M-F, 8:00-4:30, Bldg. 15, Mail Stop 955
Internet—http://library.usgs.gov
E-mail—men_lib@usgs.gov

Reference
Phone—(650) 329-5027

Education Collection
Phone—(650) 329-5081

Circulation
Phone—(650) 329-5026 or

Earthquake Information
Recent earthquake activity in northern and central California, (recorded message) updated daily M-F, more frequently during times of high or unusual seismic activity
Phone—(650) 329-4025

Earthquake Information Hotline
General information about earthquakes, faults, and seismology
Phone—(650) 329-4085
Internet (real-time earthquake information)—
http://quake.usgs.gov

Human Resources Office
Hours—M-F, 7:30-4:00, Bldg. 6, Mail Stop 613

Employment information
Phone—(650) 329-4104
TDD—(650) 329-4123
Internet—http://www.usgs.gov/ohr

Volunteer for Science Program
Internet—http://www.usgs.gov/volunteer